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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SOUW, BERNARD E

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 08/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/857,311

Applicant(s)

GROSSWANG ET AL.

Examiner

Bernard E Souw

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32-62 is/are rejected.
- 7) ☒ Claim(s) 51 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

2. The disclosure is objected to because of the following informalities:

- Pg.8/line 7" The phrase "An *especially advantageously* embodiment) is grammatically wrong.
- Pg.4/line 26, ..., pg11/line 9, ... pg.17/line 17, etc.: The verb "*to train*" (also recited in many claims and throughout the entire specification) is used by the Applicant to mean "*to direct*", while the accepted meaning is "*to form by instruction, discipline, or drill*" (Merriam-Webster's Collegiate Dictionary, 10th edition, 2001). The same thing is with the same word "*which is trained*" on pg.17/line 17, used by Applicant to mean "*which is assigned or designated to*". While a term in the claims may be given a special meaning in the description of the invention, generally no term may be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947).
- Part of the disclosure on pg.13/ll.20-21 is objected to, because the measuring window 5 should **not** "*lie in, shortly ahead of, or behind the focal plane of the cylindrical lens*" as recited, and also illustrated in Fig.2. More plausible is the next recitation on pg.13/ll.21-26, "*when the latter is not a semi circle but rather has a circularly segmental form, i.e.*". It is well known to one of ordinary skill in the art that the focal plane of a

Art Unit: 2881

lens can either lie *outside* of the lens material/body, or – if the lens has a thick, hemispherical or semi cylindrical form – then *within* the lens body at a distance r/n below or beyond the lens dissecting plane, as disclosed by Schultz et al. (USPAT #6180415 B1).

- Pg.16/line 12, “*region 31-36*” should read “*region 33-36*”.
- Pg.16/line 17 recites “*measuring window 5*” in reference to Fig.6. However, there is no numeral 5 in Fig.6.
- Pg.18/line 24, “*the fourth light source 40*” should read “*the fourth light source 45*”.
- Pg.18/line 27, “*the third region 45*” should read “*the third region 35*”.

Claim Objections

3. Claim 51 is objected to because of the following informalities: The word “hawing” in line 4 is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 32-47, 49-56, 59-60, and 62 are rejected under 35 U.S.C. 112, second paragraph, for reciting claim language that are deemed to be indefinite, as stated below:

- Claims 32-47 and 49 recite the term “***security***”, which is unclear what is really mean:, a “*security deposit*”, a “*security feature*”, a “*security object*”, or one of the many

Art Unit: 2881

other interpretation possibilities. The term "*security*" is not a popular term well known and/or conventionally used by the public.

- The term "***small***" in claim 43 is a relative term which renders the claim indefinite. The term "*small*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In addition, the subsequent term "*at a small distance from a flat side of the cylinder*" is also indefinite, for failing to specify, on the ***inside or outside*** of the semi cylinder.

- Claim 45 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections as explained below. See MPEP § 2172.01.

Claim 45 recites a light guide made of "*cylindrical hollow mirror, whereby the measuring window lies in a region of a focal plane of the hollow mirror*". It is unclear to which embodiment claim 45 is referring to, to Fig.2 or Fig.3 ? If it refers to Fig.2, the device won't not work, because there is no "light guide" in Fig.2. If it refers to Fig.3, with the light guides 19 being made of "*cylindrical hollow mirror*", how can one possibly put the measuring window 5 "*in a region of a focal plane of the hollow mirror*" ?

The term "***hollow mirror***" in claim 45 is a relative term which renders the claim indefinite. The term "*hollow mirror*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Art Unit: 2881

- Claim 49 recites in addition the term "*receiver*", which also is not used in its conventional meaning.
- Claim 49 recites the step of "*training*" ... *light beams ... onto a measuring window*", while claim 54 recites the term "*a second light source which is trained*", in both of which the word "train..." are used not in their conventional meaning.

The terminology used in claims 32-47, 49 and 54 are generally narrative and indefinite, failing to conform to current U.S. practice. They appear to be a literal translation into English from a foreign document.

- Claim 49 recites the limitation "*the reference paper*" in line 2. There is insufficient antecedent basis for this limitation in the claim, since the parent claim 48 only recites "*a test object with a respective reference object*".
- Claims 51, 56, 59, 60 and 62 recite the limitation "*the emplacement surface*". There is insufficient antecedent basis for this limitation in the claim.
- Appropriate corrections to claims 32-47, 49-56, 59-60, and 62 are required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Insofar as the Examiner can ascertain beyond the above 35 U.S.C. § 112 rejection(s), claims 32-34, 36, 46, 47, 51, 54, 56, and 59-62 are rejected under 35

Art Unit: 2881

U.S.C. 103(a) as being unpatentable over Haslop et al. (USPAT #4,296,326) in view of Baltes et al. (USPAT #4,537,504) and Stein (USPAT #5,436,716).

7. Regarding claim 32, Haslop et al. disclose in Fig.1 a device for *inspecting security marks* by visual verification of the angle-dependent scattering behavior of a security *object*, comprising:

- a holding device 2 (having a holding surface 12) which has a measuring window (not numbered) which can be brought into a predetermined relative position to a security *object* to be verified (by moving the drum 2) and an observation window (front end of light guide arrays 15 and 16) that can be viewed by an observer (from the rear end of light guide arrays 15 and 16), as recited in Col.3/ll.53-68 and Col.4/ll.1-9. Applicant's term "observation window" is here interpreted as being identical to the "viewing component" used by Haslop et al., since a "viewing component" inherently must have a "window" *to view the illuminated area*, as implicated in Col.4/ll.18-22 (more accurate terminology is rendered obvious by Stein, see below);
- a light feed 12 (carried by the holding device, not shown) and directing parallel light beams (through 12) at a predetermined angle α onto the measuring window (unlabeled on the drum's surface N), as recited in Col.4/6-15; and
- a light guide device 15 or 16 (carried by the holding device, not shown) and capturing a plurality of light beams outputted from a point of the measuring window at different angles (β_1, β_2), as recited in Col.4/ll.16-22, and displaying them in parallel or convergingly in the observation window.

Art Unit: 2881

However, Haslop's light feed is directed at a predetermined angle $\alpha=0^0$ onto the measuring window, and Haslop's light guides are not specifically arranged to capture a plurality of light beams at different angles (β_1 , β_2). Further, Haslop et al. do not display the light outputs, neither parallel nor convergingly, in an observation window.

Baltes et al. disclose a similar inspection device as shown in Fig.7. The embodiment shown in Fig.7 has light feed 7 that is directed to the object surface 2 at an angle (α) different than 0^0 , and Baltes' light guides 10 and 11 are directed under observation angle β_1 that is different than the other observation angle β_2 .

It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to modify Haslop's invention with the teaching of Baltes et al., i.e., to direct the illuminating light at an angle α different than 0^0 and observe the scattered light from a plurality of different angles β_1 , β_2 , etc., since such a plurality of angles enhances the unique characteristics of the security feature(s) to be verified and validated.

However, Haslop et al. as modified by Baltes et al. do not display the light outputs in an observation window, neither parallel nor convergingly. Stein invents an apparatus shown in Fig.1 and 2 for testing objects such as security documents. Stein's apparatus is equipped with an *observation window*, as recited in Col.4/ll.32-48 referring to viewing window B illustrated in detail in Fig.2. As shown in Fig.1 and 2, Stein displays the light outputs convergingly in the observation window onto a detector 5, or parallel to an observer at the site of the filter 7.

Art Unit: 2881

It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to further combine the invention of Haslop et al. as modified by Baltes et al. with Stein's teaching to replace Haslop's narrow viewing angle light guides 15 & 16 with Stein's "light guide" that leads into an observation window, since the latter has a large viewing angle that allows the use of a detector array, or a TV camera, as known in the art.

8. Regarding claims 33 and 34, one of ordinary skill in the art would certainly know that the relative positions of the light feed and the light guide devices are completely irrelevant for the function of the apparatus, as implicated in Baltes's Fig.7, showing light guide 11 on the same side as the light feed 7 (with respect to normal to object surface 2) , whereas light guide 10 is located on the opposite side of the light feed 12.

9. Regarding claim 36, Haslop's light feed 12 has a light source 10, as recited in Col.4/ll.6-15.

10. Regarding claim 46, Haslop's light guides 15 & 16 shown in Fig.1 as modified by Baltes's light guides 10 & 11 shown in Fig.7 are respectively oriented at different angles β_1 , β_2 .

11. Regarding claim 47, Baltes's light guides 10 & 11 have their ends open adjacent to one another in the observation window 25 represented by two detectors 26 & 27, as

Art Unit: 2881

shown in Fig.7 and recited in Col.7/ll.44-55. Although Baltes's light guides 10 & 11 consist of more components than Applicant's, and Baltes's purpose of using two detectors 26 & 27 is different than Applicant's, Baltes's apparatus as a whole and in general would do what the Applicant is trying to do with his claimed invention. Thereby the components which are not needed can be simply discarded.

12. Insofar as the Examiner can ascertain beyond the above 35 U.S.C. § 112 rejection(s), the addition of a housing in claim 51 is a pure matter of design choice, which is not patentable because it only involves routine skill in the art. In any case, a housing is shown in Haslop's Fig.7 and Fig.1 by numerals 9 and 9A, as recited in Col.4/line 7 and line 30.

The recitation of the first and second regions is disclosed by Haslop et al. in Fig.1 by the additional apparatus 5 and/or 17, or in Fig.7 by the a duplicate of device 8 viewing a second region (not numbered), as recited in Col.6/ll.9-17, whereas the step of shifting the position is inherent to the function of drum 2 as a holder and object transporter. Again, the fact that Haslop's purpose of adding a second region (with or without a duplicate viewing device) is different than Applicant's, is irrelevant, as already described above.

The relative position of Haslop's second region (or measuring window) with respect to the first region (window) is also irrelevant, since both alternatives can be made available for viewing by simply shifting their positions using the drum 2.

Art Unit: 2881

The recitation of an IR camera targeting the second region is rendered obvious by Haslop's second viewing system shown in Fig.7, which may be equipped with an IR camera instead of PM1A and PM2A, just by virtue of routine skill in the art.

13. Regarding claim 54, Haslop's apparatus shown in Fig.7 has a second light source 10A.

14. Regarding claim 56, Haslop's 'second' surface viewed by device 5 (and/or 18) comprising a third (and 4th) light source in Fig.1 and/or Fig.7 is permeable, as is self obvious in the figure, and also recited in Col.4/ll.30-36, characterized by the word "transmission".

15. Regarding claim 59, the addition of the third region with a housing having a fourth light source is shown by Haslop et al. in Fig.7, showing four illumination & viewing devices equipped with housings and light sources, whereas a fourth light source having a significant proportion of its radiation in the ultraviolet light range is disclosed by Haslop et al. in Col.4/ll.9-13.

16. The limitations of claims 60-61 are pure matters of design choice well known in the art, and are therefore unpatentable for involving only routine skills in the art.

Art Unit: 2881

17. Regarding claim 62, the recitation of a fourth region with an inductive sensor is also a routine matter of design choice, in the case that the device is designed to be used for inspecting security objects that is marked by magnetic tags, such as magnetic cards. Thus, claim 62 is unpatentable for containing limitations that are pure matters of design choice well known within skill in the art.

18. Insofar as the Examiner can ascertain beyond the above 35 U.S.C. § 112 rejection(s), claims 35, 37-41, 52 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haslop et al. in view of Baltes et al. and Stein, as applied to claims 32, 36, and 51 above, and further in view of Chapman et al. (USPAT #4,650,320).

Haslop et al. as modified by Baltes et al. and Stein, recite all the limitations of claims 35, 37-41, 52 and 53, as already applied to the respective parent claims 32, 36, and 51 above, except for additional recitations that are rendered obvious by Chapman et al., to be addressed individually as follows:

19. Regarding claim 35, to use a viewing screen to observe the scattered light beams is as trivial as also inherent to Haslop's use of arrays of light guides 15 and 16 arranged in ribbon formations, the latter recited in Col.4/II.17-22. Furthermore, using a viewing screen to observe the scattered light beams is technologically more primitive than Haslop's method of using arrays of light guides 15 and 16, or a detector array as disclosed by Chapman et al. in numeral 7 of Fig. 1, recited in Col.3/II.57-62, or a CCD camera or a TV camera connected to a computer, as known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a viewing screen as a replacement of Chapman's photodiode array 7 in Fig.1, since a viewing screen is an outdated viewing means more simple and more primitive than a photodiode array. To use a technologically backward version of a well-known method used in the prior art cannot be claimed as an invention.

20. Regarding claims 37 and 38, the use of a white light source (claim 37) is disclosed by Chapman et al. in Col.3/ll.67-68 and Col.4/ll.1-4, and the use of a light emitting diode (LED) is disclosed by in Col.2/ll.33-34.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a white light source and/or a LED as taught by Chapman et al., in order to have a wide flexibility of viewing scattering characteristics of different wavelengths, including characteristic fluorescence of a security mark, thus improving the security verification or validation method. Chapman's purpose of using an LED may be different than Applicant's, but LEDs are known as being commercially available also in white, thus representing Chapman's white light source.

21. Regarding claim 39, the use of ambient light as an alternative for white light is well-known in the art. As matter of fact, ambient light, although white, can not be controlled regarding intensity, spectral distribution, and angular distribution, and hence, providing a less desirable method, while technologically more primitive, than using an

Art Unit: 2881

artificial source of white light. By all means, the use of a technologically backward version of a well-known method in the prior art cannot be claimed as an invention.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use ambient light as a replacement for white light source as taught by Chapman et al., in order to be able to operate the device without electricity.

22. The limitation of claim 40 is trivial, because a "light feed" is understood by those ordinarily skilled in the art as "being channeled through a light guide". Furthermore, the specification does not disclose any structural distinction between the two.

23. Regarding claim 41, Stein's light guide 10 shown in Fig.2 is a collecting lens and Stein's measuring window is located on the holding plane¹ lying in a region of a focal plane of the collecting lens 10, as recited in Col. 4/II.20-31.

24. Regarding claims 52 and 53, Chapman's filter 5 in Fig.1 is a blocking filter for the visible range, whereas an infrared-sensitive CCD camera, as a specific form of photodiode array 7, is understood in the art as a black white camera. The use of a monitor connected to the output of the IR camera of claim 53 is inherent to the use of a CCD camera.

25. Insofar as the Examiner can ascertain beyond the above 35 U.S.C. § 112 rejection(s), claims 48, 49 and 50 are rejected under 35 U.S.C. 103(a) as being

Art Unit: 2881

unpatentable over Haslop et al. in view of Baltes et al. and Stein, as applied to claim 32 above, and further in view of Wang et al. (USPAT #5,767,980).

Haslop et al. as modified by Baltes et al. and Stein show all the limitations of claims 48, 49 and 50, as applied to claim 32 above, except the recitation of a few additional limitations all rendered obvious by Wang et al., to be individually addressed in the following:

26. Regarding claim 48, the additional limitation of using two devices of claim 32 is rendered obvious by Wang et al. in Fig.2 by numerals 18 and 20 illuminating test object 14 and reference object 38, respectively, as disclosed in Col.4/ll.50-59. The specific use of Wang's two-device system for reference and test objects, respectively, is expressly recited in Col.7/ll.25-31 with reference to Fig.11.

27. Regarding claim 49, the limitation of a *receiver* (=object holder) for the reference is inherent in Wang's in the second apparatus. As a matter of fact, to add a second apparatus to simultaneously view a reference paper is not only expensive, but also technologically more backward than using modern computers to store the reference data and recall it back on the screen anytime it is needed for comparison. A technologically backward version of a well-known method used in the prior art cannot be claimed as an invention.

Art Unit: 2881

The recitation of an additional abutment in claim 49 for positioning a *security object* to be validated is a mere matter of design choice, which is not patentable because it only involves routine skill in the art.

28. Specifically regarding claim 50, Haslop's receiver (=document holder) comprises a drum, as shown in numerals 3 (or 2) in Fig.1, as already recited above.

29. Insofar as the Examiner can ascertain beyond the above 35 U.S.C. § 112 rejection(s), claims 55, 57 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haslop et al. in view of Baltes et al., and Stein, as applied to claim 54 above, and further in view of Cottingham et al. (USPAT # 4,029,418).

Haslop et al. as modified by Baltes et al. and Stein show all the limitations of claims 55, 57 and 58, as previously applied to claim 54, except for a few additional limitations that are to be individually addressed in the following, all being rendered obvious by Cottingham et al.

30. Regarding claims 55 and 58, the recitation of a glow filament lamp is a pure matter of design choice that is entirely within skill in the art, but anyway, also disclosed by Cottingham in light source 33 in Fig.2, which is a glow filament lamp, as recited in Col.3/ll.31-38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a glow filament lamp for illuminating the test object, since a

Art Unit: 2881

glow filament lamp has a significant part of its radiation in the visible light range as taught by Cottingham et al., in order to have a wide flexibility of viewing scattering characteristics of different wavelengths, including characteristic fluorescence of a security mark, thus improving the security verification or validation method.

31. Regarding claim 57, the recitation of a light source having a significant proportion of its radiation in the visible light range is a pure matter of design choice that is entirely within skill in the art, and furthermore, also covered by Cottingham's light source 33 in Fig.2, which is a glow filament lamp, as recited in Col.3/ll.31-38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a light source having a significant part of its radiation in the visible light range as taught by Cottingham et al., in order to have a wide flexibility of viewing scattering characteristics of different wavelengths that will improve the security verification or validation method.

32. Insofar as the Examiner can ascertain beyond the above 35 U.S.C. § 112 rejection(s), claims 42-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haslop et al. in view of Baltes et al., Stein, and Chapman et al., as applied to claim 41 above, and further in view of Bercovitz (USPAT #5,034,616).

Haslop et al. as modified by Baltes et al., Stein, and Chapman et al. show all the limitations of claims 42-45, as previously applied to the parent claim 41, except for

Art Unit: 2881

additional recitations that are all rendered obvious by Bercovitz et al. , to be addressed individually as follows:

33. Regarding claim 42, Bercovitz's collecting lens 9 shown in Fig.1 is a cylindrical lens, as recited in Col.2/ll.34-36.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a cylindrical collecting lens as taught by Bercovitz, since such a lens would better match the string- or strip-like geometry of security marks, e.g., the security thread in a bank note.

34. Regarding claim 43, the limitation of a collecting lens configured as a semi cylinder is already encompassed in the rejection of claim 42 above, whereas -- insofar as the Examiner can ascertain beyond the above 35 U.S.C. § 112 rejection --, the limitation that the measuring window is located at a *small* distance from the flat side of the semi cylinder lens is self-obvious in Bercovitz's Fig.1.

35. Insofar as the Examiner can ascertain beyond the above 35 U.S.C. § 112 rejection, the limitation of claim 44 that the light guide is embedded in the semi cylinder is disclosed by Bercovitz in light guide 4 being "*embedded*" in the semi cylinder lens 9 (or vice versa), as is self-obvious in Fig.1.

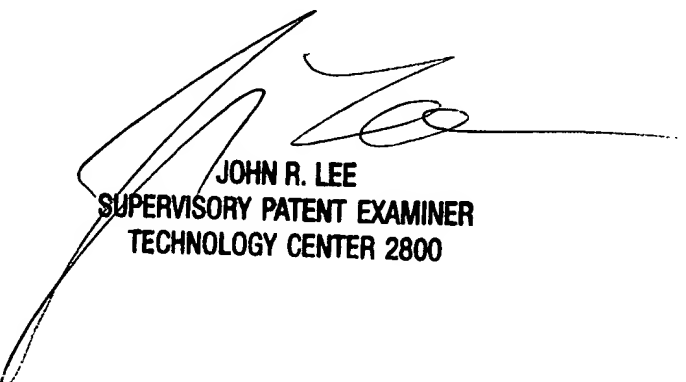
Art Unit: 2881

36. Insofar as the Examiner can ascertain beyond the above 35 U.S.C. § 112 rejection, the limitation of claim 45 is readily disclosed in Haslop's light guides¹⁵ and ¹⁶, as recited in Col.4/ll.17-20. It is widely known in the art that fiber optics belongs to the category of light guides, and works on the general principle of a "hollow mirror".

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard E Souw whose telephone number is 703 305 0149. The examiner can normally be reached on Monday thru Friday, 9:00 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 703 308 4116. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9318 for regular communications and 703 872 9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.



JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

bes

August 5, 2002